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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/437,764	11/09/1999	LOUIS C. YUN	015685-032/5	8412

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EXAMINER

NGUYEN, STEVEN H D

ART UNIT PAPER NUMBER

2665

*32*

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/437,764

**Applicant(s)**

YUN ET AL.

**Examiner**

Steven HD Nguyen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/09/1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/3/2003 has been entered.

### ***Claim Objections***

2. Claims 10 and 33 are objected to because of the following informalities:

As claims 10 and 33, lines 6, the acronyms "SU" must be spell out. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6-7, 10-13, 15-16, 19-27, 29-30, 33-36, 38-39 and 42-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schorman (USP 5960350) in view of Moore (USP 6075989).

Regarding claims 1 and 10, Schorman discloses (Fig 1-3 and col. 1, lines 5 to col. 7, lines 40) a method and system for determining an antennae array weight set corresponding to a subscriber unit (SU) for cellular communications between the SU and a first base station (BS) of the system wherein the system comprises the first BS and the numbers of order base stations comprises the step of transmitting a plurality of test pilot downlink signals from the first base station to the SU wherein each test pilot downlink signal processed with a different weight set "phase and gain" than the other test pilot downlinks signals (Fig 2, Ref 72 for generating a beacon "pilot" signal and Ref 74 used to control phase and gain of pilot signals or data signal wherein each beacon has a different phase and gain; See col. 5, lines 42-58; this beacon only use for determining the phase and gain); receiving a report signal for at least one of the pilot downlink signals (Fig 2, Ref 78 for receiving a beacon "pilot" quality report from a mobile) and selecting a weight set from the plurality of weight sets based on the received report signal (Fig 2, Ref 82 is used to select a weight set from the received reports signal). Schorman does not fully disclose each test pilot downlink signal comprising a CDMA pilot signal associated with one of other base stations. However, Schorman discloses the base station transmits a beacon pilot signal, which has a different PN offset from the pilot signal of the sector (See col. 5, lines 42-58). In the same field of endeavor, Moore discloses each test pilot downlink signal comprising a CDMA pilot signal associated with one of other base stations used to transmitting on source base (See col. 2, lines 39-56).

Since, Schorman suggests the use of a pilot signal of the other sector on the source sector. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method and system for transmitting the pilot signal of the target

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sector on the carrier frequency of the source sector as disclosed by Moore into the system and method of Schorman. Even without, Moore, one of ordinary skill in the would have been recognized that the source sector of Schroman uses the pilot signal of another sector can be applied into source base and target base because the IS-95 CDMA discloses that each base or sector or cell is associated with a pilot signal which is only different in PN offset “512 PN offset for using the cell or sector or base”. The motivation would have been to prevent a drop call.

Regarding claims 2-4 and 11-13, Schorman discloses transmitting a CDMA pilot downlink signal from the first BS to the SU wherein the CDMA pilot downlink signal includes a first identifier identifying the first base station; the test pilot downlink signals includes a second identifier that is different from the first identifier, the second identifier identifying; the second base station wherein the distance between the base stations is sufficient enough to assure the communication between the second base station and subscriber unit will not interference the first pilot signal transmitted by the first base station (Col. 5, lines 42-58, each pilot signal has an unique PN code for a base station, each base station is identified with a unique code in order to prevent the interference between the communication between the second base and mobiles and the transmitted pilot signal of the first base station).

Regarding claims 6-7 and 15-16, Schorman discloses the subscriber monitoring each of a plurality of CDMA pilot downlink signals in a set of CDMA pilot downlink signals and said test pilot signals selected from the set of CDMA pilot down link signals (col. 7, lines 5-18) and implicitly discloses the pilot signals includes in one of candidate, Neighbor and remaining set in CDMA standard.

Regarding claim 19, Schorman discloses (Fig 1-3 and col. 1, lines 5 to col. 7, lines 40) a system comprising a receiving circuit for coupling to an array antenna of a base station, to receive a report signal which corresponds to at least one of test pilot signal, the at least one test pilot signal comprising a CDMA pilot signal (Fig 2, Ref 24 is array antenna, ref 78 is used to receive a report signal which associated with a downlink beacon; this beacon only use for determining the phase and gain); transmit weight processor for coupling to the receiving circuit for determining a weight set must be applied to a downlink signal based on the report signal (Fig 2, Ref 82 and 76 and 70). Schorman does not fully discloses each test pilot downlink signal comprising a CDMA pilot signal associated with one of other base stations. However, Schorman discloses the base station transmits a beacon pilot signal, which has a different PN offset from the pilot signal of the sector(See col. 5, lines 42-58 wherein the beacon signal is offset from the pilot signal of the sector wherein each sector has a pilot signal which is differently from the pilot signal of the other sector based on its offset). In the same field of endeavor, Moore discloses each test pilot downlink signal comprising a CDMA pilot signal associated with one of other base stations used to transmitting on source base (See col. 2, lines 39-56).

Since, Schorman suggests the use of a pilot signal of the other sector on the source sector. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method and system for transmitting the pilot signal of the target sector on the carrier frequency of the source sector as disclosed by Moore into the system and method of Schorman. Even without, Moore, one of ordinary skill in the would have been recognized that the source sector of Schroman uses the pilot signal of another sector can be applied into source base and target base because the IS-95 CDMA discloses that each base or

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sector or cell is associated with a pilot signal which is only different in PN offset “512 PN offset for using the cell or sector or base”. The motivation would have been to prevent a drop call.

Regarding claims 20-23 and 43-46, Schorman discloses a transmit circuit, coupled with the transmit weight processor, to apply the determined weight set to beamform a downlink signal which is a data and a CDMA pilot signal used by the base station and a pilot signal generator for generating a plurality of test pilot signals (Fig 2, Ref 62, Ref 70 is data signal and ref 72 is for generating pilot signals).

Regarding claims 24, 33 and 42, Schorman discloses (Fig 1-3 and col. 1, lines 5 to col. 7, lines 40) a system for determining an antennae array weight set corresponding to a subscriber unit (SU) for cellular communications between the SU and a first base station (BS) comprises the step of transmitting a plurality of test pilot downlink signals from the first base station to the SU, each test pilot downlink signal processed with a different weight set “phase and gain” than the other test pilot downlinks signals, each test pilot downlink signal comprising a pilot signal typically used for at least one of controlling power and base station handoff (Fig 2, Ref 72 for generating a beacon “pilot” signal and Ref 74 used to control phase and gain “power” of pilot signals or data signal wherein each beacon has a different phase and gain; this beacon only use for determining the phase and gain); receiving a report signal for at least one of the pilot downlink signals (Fig 2, Ref 78 for receiving a beacon “pilot” quality report from a mobile) and selecting a weight set from the plurality of weight sets based on the received report signal (Fig 2, Ref 82 is used to select a weight set from the received reports signal). Schorman does not fully disclose each test pilot downlink signal comprising a CDMA pilot signal associated with one of other base stations. However, Schorman discloses the base station transmits a beacon pilot

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signal, which has a different PN offset from the pilot signal of the sector (See col. 5, lines 42-58 wherein the beacon signal is offset from the pilot signal of the sector wherein each sector has a pilot signal which is differently from the pilot signal of the other sector based on its offset). In the same field of endeavor, Moore discloses each test pilot downlink signal comprising a CDMA pilot signal associated with one of other base stations used to transmitting on source base (See col. 2, lines 39-56).

Since, Schorman suggests the use of a pilot signal of the other sector on the source sector. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method and system for transmitting the pilot signal of the target sector on the carrier frequency of the source sector as disclosed by Moore into the system and method of Schorman. Even without, Moore, one of ordinary skill in the would have been recognized that the source sector of Schroman uses the pilot signal of another sector can be applied into source base and target base because the IS-95 CDMA discloses that each base or sector or cell is associated with a pilot signal which is only different in PN offset "512 PN offset for using the cell or sector or base". The motivation would have been to prevent a drop call.

Regarding claims 25-27 and 34-36, these claims are similar to claims 2-4. Therefore, these claims are rejected under similar rationale.

Regarding claims 29-30 and 38-39, these claims are similar to claims 6-7. Therefore, these claims are rejected under similar rationale.

5. Claims 5, 8-9, 14, 17-18, 28, 31-32, 37 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroman and Moore as applied to claims 1, 11, 19, 24, 33 and 42 above, and further in view of Sunay (USP 5940743).



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Regarding claims 5, 8-9, 14, 17-18, 28, 31-32, 37 and 40-41, Schorman discloses the subscriber unit receiving a plurality of pilot signal from a plurality of base stations, measuring the signal strength of a plurality of pilot signal in order to report the measured signals to the serving base station (Col. 5, lines 42-58) and Moore discloses a method and system the source base initiates a handoff and notifies the target base about handoff information after receiving a PSMM report from a mobile (Col. 2, lines 12-38). Schorman and Moore do not disclose a serving base transmitting an estimate of the weight set to be used after handoff. However, Sunay discloses a method and apparatus for receiving a CDMA pilot signal from the second base station and report signal indicating the signal strength of the CDMA pilot downlink signal from the second BS and determining whether to hand of the SU to the second BS based on the signal strengths reported for the CDMA pilot signal transmitted by the first BS, the one test pilot signal including the second identifier transmitted by the first BS and CDMA pilot signal transmitted by the second BS and transmitting an estimate of the weight set to be used after handoff to the second base station (See col. 5, lines 5-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to apply a method and apparatus for transmitting the estimated value to the target base after receiving a report measurement pilot signal strength as disclosed by Sunay into the method and apparatus of Moore and Schroman. The motivation would have been prevent a drop call.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Wee (USP 6272122) discloses a method and system for assigning the PN offset for each base station, cell or sector in reuse method.

Schwartz (USP 6556551) discloses a method and system for assigning the PN offset for each base station, cell or sector in reuse method.

Lynch (USP 6122266) discloses a method and system for assigning the PN offset for each base station, cell or sector in reuse method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (703) 308-8848. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on (703) 308-6602. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



Steven HD Nguyen  
Primary Examiner  
Art Unit 2665  
11/07/03